IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:

Oxaal, Ford

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Title:

Method for Interactively Viewing Full-Surround Image Data and

Apparatus Therefore

Art Unit:

2628

Docket No.:

GRND-24C

EXHIBIT 1: COMPARISON OF CLAIMS

REVISED CLAIM **CLAIM EDITS** ORIGINAL CLAIM 60. A method of modeling of 1. A method of modeling of the A method of modeling of visible world using full-surround the visible world using fullthe visible world using fullimage data, said method surround image data, said method surround image data, said method comprising: comprising: comprising: selecting a view point selecting a view point texture mapping fullwithin a p-surface, wherein the within a p-surface wherein the psurround image data onto a psurface comprises polygons surface such that the resultant p-surface comprises polygons approximating a partial spherey approximating a partial sphere; texture map is substantially selecting a direction of equivalent to projecting the fullselecting a direction of view within the p-surface; surround image data onto the pview within the pourface: texture mapping fullsurface from a point of projection texture mapping fullsurround image data onto said p o thereby generate a texture surround image data onto surface such that the resultant mapped p-surface; [[said]] a p-surface such that the selecting a direction view from a view point; and selecting a direction of texture map is substantially resultant texture map is equivalent to projecting fullsubstantially equivalent to surround image data onto the p-7 displaying a portion of projecting the full-surround surface from said view point to said texture mapped p-surface image data onto the p-surface thereby generate a texture based on the selecting: from said-view a point of mapped p-surface; and wherein the p-surface projection to thereby generate a displaying a comprises polygons texture mapped p-surface; predetermined portion of said approximating a partial sphere. selecting a direction of texture mapped p-surface. view from a view point; and displaying a predetermined portion of said texture mapped p-surface based on the selecting; wherein the p-surface comprises polygons approximating a partial sphere

43. A method of modeling a hemispheric view, said method comprising:

capturing a first
texture p-surface data set
approximating a first
hemisphere portion derived
from a distorted view captured
from a first wide-angle lens,
said first texture p-surface
data set comprising at least a
portion of full-surround data
wherein the full-surround data
includes a partial hemisphere;

selecting a view point within the p-surface;

selecting a direction of view within the p-surface;

texture mapping the full-surround data to a triangulation approximating the first hemisphere onto the p-surface substantially equivalent to projecting the full-surround data onto the p-surface from said view point;

generating a texture mapped p-surface corresponding to the selected view; and

displaying the selected view of the texture mapped p-surface.

66. A method of modeling a hemispheric view, said method comprising:

capturing a first texture p-surface data set approximating a first hemisphere portion derived from a distorted view captured from a first wide-angle lens, said first texture p-surface data set comprising at least a first portion of full-surround image data;

texture mapping the full-surround image data to a triangulation approximating the first hemisphere portion onto a p-surface in a manner substantially equivalent to projecting the full-surround image data onto the p-surface from a point of projection;

selecting a direction of view from a view point; and

displaying a portion of the texture mapped p-surface based on the selecting

wherein the fullsurround image data includes at least a partial hemisphere. 66. a method of modeling a hemispheric view, said method comprising:

capturing a first
texture p-surface data set
approximating a first
hemisphere portion derived
from a distorted view
captured from a first wideangle lens, said first texture
p-surface data set comprising
at least a first portion of fullsurround image data wherein
the full surround data
includes a partial
hemisphere;

selecting a view point within the p-surface;

selecting a direction of view within the p-surface;

texture mapping the full-surround image data to a triangulation approximating the first hemisphere portion onto a p-surface in a manner substantially equivalent to projecting the full-surround image data onto the p-surface from said view a point of projection;

selecting a direction of view from a view point; and

generating a texture mapped p surface corresponding to the selected view; and

displaying the selected view a portion of the texture mapped p-surface based on the selecting;

wherein the fullsurround data includes at least a partial hemisphere. 50. A method of modeling an image from a wide-angle lens, said method comprising:

texture mapping image data from the wide-angle lens onto a triangulation of at least a portion of a first hemisphere of full-surround data onto a psurface wherein the full-surround data includes a partial hemisphere;

selecting a viewpoint within the p-surface;

selecting a direction of view within the p-surface;

selecting a perspective of view;

generating a texture mapped p-surface corresponding to the selected view from the selected perspective using the fullsurround data; and

displaying the generated view of the texture mapped p-surface.

72. A method of modeling an image from a wide-angle lens, said method comprising:

texture mapping image data from the wide-angle lens onto a triangulation of at least a portion of a first hemisphere of full-surround image data onto a p-surface;

selecting a direction of view from a viewpoint within the p-surface;

selecting a perspective of view:

generating a texture mapped p-surface corresponding to the selected direction of view from the selected perspective using the full-surround image data; and

displaying a portion of the texture mapped p-surface based on the selecting a direction of view and then selecting a perspective of view;

wherein the fullsurround image data includes at least a partial hemisphere. 72. A method of modeling an image from a wide-angle lens, said method comprising:

texture mapping image data from the wide-angle lens onto a triangulation of at least a portion of a first hemisphere of full-surround image data onto a p-surface wherein the full-surround data includes a partial hemisphere;

selecting a <u>direction</u> of view from a viewpoint within the p-surface;

selecting a direction of view within the p-surface;

selecting a perspective of view;

generating a texture mapped p-surface corresponding to the selected direction of view from the selected perspective using the full-surround image_data; and

displaying the generated view a portion of the texture mapped p-surface based on the selecting a direction of view and then selecting a perspective of view; wherein the full-surround image data includes at least a

partial hemisphere.